

Exhibit A. Alignment of nucleotide sequences encoding B domains of four G482 related species

(SEQ ID NOs appear in parentheses; asterisks indicate identical bases in each alignment)

G482 (4) AGAGAGCAAGACAGGTTCTTGCCGATCGCTAACGTCAGCCGGATCATGAAGAAGGCCTTG
G485 (6) CGTGAGCAAGATAGGTTTCTACCGATCGCTAACGTTAGCAGGATCATGAAGAAAGCACTT
G3395 (74) AGGGAGCAGGACAGGTTCTTGCCCATCGCCAACATCAGCCGCATCATGAAGAAGGCCGTG
G481 (2) AGGGAGCAGGATCGATACCTTCCTATAGCTAATATCAGCAGGATCATGAAGAAGGCCTTG
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G482	(4)	CCCGCCAACGCCAAGATCTCTAAAGATGCCAAAGAGACGATGCAGGAGTGTGTCTCCGAG
G485	(6)	CCTGCGAACGCCAAAAATCTCTAAGGATGCTAAAGAAACGGTTCAAGAGTGTGTATCGGAA
G3395	(74)	CCGGCGAACGGCAAGATCGCCAAGGACGCCAAGGAGACCCTGCAGGAGTGCCTCTCGGAG
G481	(2)	CTCCTTAATGGTAAGATTGGA AAAAGATGCTAAGGATACAGTTTCAGGAATGCGTCTCTGAG
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G482	(4)	TTCATCAGCTTTCGTCAACGAGAAGCATCTGATAAGTGTCAGAAGGAGAAGAGGAAGACG
G485	(6)	TTCATAAGTTTCATCACCGGTGAGGCTTCTGACAAGTGTCAGAGAGAGAAGAGGAAGACA
G3395	(74)	TTCATCTCCTTCGTCAACCAGCGAGGCGAGCGCAAATGTGAAAAGGAGAAGCGCAAGACC
G481	(2)	TTCATCAGCTTCATCACTAGCGAGGCCAGTGATAAGTGTCAAAAAGAGAAAAGGAAACT
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G482	(4)	ATCAACGGAGACGATTTGCTCTGGGCTATGACTACTCTAGGTTTTGAGGATTATGTTGAG
G485	(6)	ATCAACGGTGACGATCTTCTTTGGGCGATGACTACGCTAGGGTTTGAGGACTACGTGGAG
G3395	(74)	ATCAACGGGGAAGATCTCCTCTTTGCGATGGGTACGCTTGGCTTTGAGGAGTACGTTGAT
G481	(2)	GTGAATGGTGATGATTTGTTGTGGGCAATTGGCAACATTAGGATTTGAGGATTACCTGGAA
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G482 (4) CCATTGAAAGTTTACTTGCAGAGGTTTAGGGAG
G485 (6) CCTCTCAAGGTTTATCTGCAAAGTATAGGGAG
G3395 (74) CCGTTGAAGATCTATTTACACAAGTACAGAGAG
G481 (2) CCTCTAAAGATATACCTAGCGAGGTACAGGGAG
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Pairwise sequence alignments:

G482 and G485

G482	(4)	AGAGAGCAAGACAGGTTCTTGCCGATCGCTAACGTTCAGCCGGATCATGAAGAAGGCCTTG
G482	(6)	CGTGAGCAAGATAGGTTTCTACCGATCGCTAACGTTAGCAGGATCATGAAGAAAGCACTT
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G482 (4) CCCGCCAACGCCAAGATCTCTAAAGATGCCAAAGAGACGATGCAGGAGTGTGTCTCCGAG
G485 (6) CCTGCGAACGCAAAAATCTCTAAGGATGCTAAAGAAACGGTTCAAGAGTGTGTATCGGAA
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G482 (4) TTCATCAGCTTCGTCACCGGAGAAGCATCTGATAAGTGTCAGAAGGAGAAGAGGAAGACG
G485 (6) TTCATAAGTTTCATCACCGGTGAGGCTTCTGACAAGTGTCAGAGAGAGAAGAGGAAGACA

G482 (4) ATCAACGGAGACGATTGCTCTGGGCTATGACTACTCTAGGTTTTGAGGATTATGTTGAG
G485 (6) ATCAACGGTGACGATCTTCTTTGGGCGATGACTACGCTAGGGTTTGAGGACTACGTGGAG
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G482 (4) CCATTGAAAGTTTACTTGCAGAGGTTTAGGGAG
G485 (6) CCTCTCAAGGTTTATCTGCAAAAGTATAGGGAG
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G482 and G3395

G482 (4) AGAGAGCAAGACAGGTTCTTGCCGATCGCTAACGTCAGCCGGATCATGAAGAAGGCCTTG
G3395 (74) AGGGAGCAGGACAGGTTCTTGCCCATCGCCAACATCAGCCGCATCATGAAGAAGGCCGTC
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G482 (4) CCCGCCAACGCCAAGATCTCTAAAGATGCCAAAGAGACGATGCAGGAGTGTGTCTCCGAG
G3395 (74) CCGGCGAACGGCAAGATCGCCAAGGACGCCAAGGAGACCCTGCAGGAGTGCCTCTCCGAG
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G482 (4) TTCATCAGCTTCGTCACCGGAGAAGCATCTGATAAGTGTGAGAAGGAGAAGAGGAAGACG
G3395 (74) TTCATCTCCTTCGTCACCGAGCGAGGCGAGCGACAAATGTCAGAAGGAGAAGCGCAAGACC
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G482 (4) ATCAACGGAGACGATTTGCTCTGGGCTATGACTACTCTAGGTTTTGAGGATTATGTTGAG
G3395 (74) ATCAACGGGGAAGATCTCCTCTTTGCGATGGGTACGCTTGGCTTTGAGGAGTACGTTGAT
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G482 (4) CCATTGAAAGTTTACTTGCAGAGGTTTAGGGAG
G3395 (74) CCGTTGAAGATCTATTTACACAAGTACAGAGAG
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G482 and G481

G482 (4) AGAGAGCAAGACAGGTTCTTGCCGATCGCTAACGTCAGCCGGATCATGAAGAAGGCCTTG
G481 (6) AGGGAGCAGGATCGATACCTTCCTATAGCTAATATCAGCAGGATCATGAAGAAAGCGTTG
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G482 (4) CCCGCCAACGCCAAGATCTCTAAAGATGCCAAAGAGACGATGCAGGAGTGTGTCTCCGAG
G481 (6) CCTCCTAATGGTAAGATTGGAAAAGATGCTAAGGATACAGTTCAGGAATGCGTCTCTGAG
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G482 (4) TTCATCAGCTTCGTCACCGGAGAAGCATCTGATAAGTGTGAGAAGGAGAAGAGGAAGACG
G481 (6) TTCATCAGCTTCATCACTAGCGAGGCCAGTGATAAGTGTCAAAAAGAGAAAAGGAAACT
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G482 (4) ATCAACGGAGACGATTTGCTCTGGGCTATGACTACTCTAGGTTTTGAGGATTATGTTGAG
G481 (6) GTGAATGGTGATGATTTGTTGTGGGCAATGGCAACATTAGGATTTGAGGATTACCTGGAA
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G482 (4) CCATTGAAAGTTTACTTGCAGAGGTTTAGGGAG
G481 (6) CCTCTAAAGATATACCTAGCGAGGTACAGGGAG
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The following is provided for informational purposes and while Applicants believe the listed percentages are correct, Applicants do not attest to the accuracy of the listed percentages.

Percent Identity to the DNA encoding the G482 B domain, determined with Accelrys Gene v. 2.5

GID		%ID (Accelrys)
G482	(4)	100.0
G485	(6)	80.2
G3395	(74)	77.7
G481	(2)	72.2

Percent Identity to the FL G482 protein determined with BLASTp (no. of identical residues / no. residues compared) or Accelrys Gene v. 2.5

GID		% ID (BLASTp)	%ID (Accelrys)
G482	(4)	100% (190/190)	100.0%
G485	(6)	68% (116/169)	73.3%
G3395	(74)	59% (93/157)	54.9%
G481	(2)	69% (91/131)	63.1%